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| EXAMINER |
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WILLIAMS, THOMAS J

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| ART UNIT | PAPER NUMBER |
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3683

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 12/22/2006 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/824,892

Applicant(s)

DE FONTENAY ET AL.

Examiner

Thomas J. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6 and 10-18 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/06/06</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Acknowledgment is made in the receipt of the amendment filed November 2, 2006 and the information disclosure statement filed December 6, 2006.

Claim Objections

2. Claims 1 and 19 are objected to because of the following informalities: claim 1 lines 11-12, the recitation "a hydroelastic spring" should be changed to "the hydroelastic spring"; claim 19 line 11, the recitation "a hydroelastic spring" should be changed to "the hydroelastic spring". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
5. Claims 1, 4-6, 10-13 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,172,894 to Hein et al. in view of US 5,887,859 to Hadano et al.

Re-claims 1 and 10, Hein et al. teach a hydroelastic joint comprising: an external reinforcement 8; an internal reinforcement 10, each has a longitudinal axis, the assembly forms a hydroelastic joint disposed between the reinforcements in order to permit a relative transverse displacement (due to recess portions 11 and 12), the assembly comprises a first elastically deformable element 7 shaped to form a sealed volume 19 containing damping fluid, a second elastically deformable element 6 is disposed the assembly forming the hydroelastic joint and the internal reinforcement 10, the second elastically deformable element has a longitudinal dimension (such as the portions between recesses 11 and 12) less than a corresponding longitudinal dimension of the first elastically deformable element, this will limit a transverse deformation of the first elastically deformable element during relative tilting of the longitudinal axes of the reinforcements about at least one transverse tilting axis, an intermediate reinforcement 15 is disposed between the first and second elastically deformable elements, the first 7 and second 6 elastically deformable elements adhering on a central portion with a constant cross section of the intermediate reinforcement, the second elastically deformable element 6 adhering on a central portion with a cross section of the internal reinforcement 10.

However, Hein et al. fail to teach the longitudinal dimension of each of the first and second elastically deformable elements being defined as an axial dimension of a portion that substantially fills a radial space between corresponding one of the reinforcements. Rather, a substantial portion of the second elastically deformable element of Hein et al. that fills a radial space between the reinforcements is substantially equal in length with the first elastically deformable element. In short the voids are too small, however, Hein et al. appear to teach that the voids can be dimensioned to achieve a desired spring rate, see column 2 lines 1-5.

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Hadano et al. teach in figures 5-6 an elastic joint having annular voids located between longitudinally aligned reinforcements, voids 42b/42d substantially fill the radial space between corresponding reinforcements. The large voids contribute to a reduction in rigidity in the torsional direction of the joint. As such, the longitudinal dimension of the second elastically deformable element is less than the longitudinal dimension of the first elastically deformable element, wherein the longitudinal dimension of each of the first and second elastically deformable elements is defined as an axial dimension of a portion that substantially fills a radial space between the corresponding reinforcements. This improves the overall ride experience for the passenger, see column 6 lines 46-59.

It would have been obvious to one of ordinary skill in the art to have maximized the size of the voids in Hein et al. as taught by Hadano et al., thus greatly reducing the torsional rigidity of the joint as well increasing the com ride comfort to the passengers. With regards to claim 10, the voids provide a reduced rigidity in a second transverse direction.

Re-claim 4, the first elastically deformable element 7 has two end walls defining the sealed chamber, a peripheral reinforcement 16 provides added rigidity.

Re-claim 5, the end walls connect in a sealed manner the intermediate and external reinforcements to define the sealed volume, the first elastically deformable element is fixed to the intermediate and external reinforcement.

Re-claim 6, the sealed volume is divided into two chambers, see figure 1, the chambers communicate with each other via channel 21.

Re-claim 11, the sealed volume 19 is divided into at least two opposite chambers according to a first transverse direction defining a hydraulic damping direction of the spring, the first transverse direction and the second transverse direction are parallel.

Re-claim 12, the sealed volume 19 is divided into at least two opposite chambers according to a first transverse direction defining a hydraulic damping direction of the spring, the first transverse direction and the second transverse direction form an angle. The angle can be any angle such as 0 degrees to about 90 degrees depending upon the relative angle of the central mount structure and the external mount structure of the vehicle.

Re-claim 13, the second elastically deformable element has at least two cells 11 and 12 are substantially longitudinal and opposite in the second transverse direction.

Re-claim 16, the external reinforcement contacts at least one of the structures and will prevent deformation of the joint beyond a prescribed amplitude limit.

Re-claim 17 and 18, Hein et al. fail to teach the hydroelastic joint used in combination with a vehicle axle. However, it is known in the art to use hydroelastic joints, as noted by the applicant, in combination with vehicle axles as support structures. It would have been obvious to one of ordinary skill in the art to have utilized the joint of Hein et al. as modified by Hadano et al. in combination with a vehicle axle as warranted, thus providing a joint with an easy means by which to alter the spring rate as necessary. The spring rate of the joint taught by Hein et al. is easily modified by varying the size of the recess portions 11 and 12, see column 2 lines 1-5.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hein et al. in view of Hadano et al. as applied to claim 1 above, and further in view of US 6,622,996 to Mayerbock et al.

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Hein et al. as modified by Hadano et al. fail to teach the first and second elastically deformable elements being obtained in a single moulding step. Mayerbock et al. teach a hydroelastic joint in which the first and second elastic elements are obtained in a single moulding step, thus saving manufacturing time. It would have been obvious to one of ordinary skill in the art when having manufactured the assembly of Hein et al. to have done so such that the first and second elastic elements would have been obtained in a single moulding step as taught by Mayerbock et al., thus reducing manufacturing time and costs.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hein et al. in view of Hadano et al. as applied to claim 1 above, and further in view of US 5,301,414 to Gautheron.

Re-claim 15, the internal reinforcement has a tubular shape. However, Hein et al. fail to teach an enlarged portion located at least at one end of the internal reinforcement. Gautheron teach a joint with an internal reinforcement 10/11 with an enlarged end portion 6 used to provide an annular reinforcement for the adjacent elastomeric element. It would have been obvious to one of ordinary skill in the art to have provided the internal reinforcement of Hein et al. with an enlarged end support surface as taught by Gautheron, thus providing an additional support surface for the adjacent elastic member.

Allowable Subject Matter

8. Claims 7-9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. Claim 19 would be allowable if rewritten to overcome the objection set forth in this Office action.

Response to Arguments

10. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Wednesday-Friday from 6:00 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan, can be reached at 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW

December 20, 2006

THOMAS J. WILLIAMS
PRIMARY EXAMINER

Thomas Williams
AU 3683
12-20-06